

wording was incorporated in claims 50 and 59, making unnecessary the Sec. 112 objection.

The claims 48, 49 to which the Section 103 rejections were directed, were cancelled in the Prel. Amendment.

The specification, pages 4 and 5, have been amended in parts to remove all references to the claims. Instead we now refer to feature, another feature, and further feature. Accordingly, the Sec 112 objections have been overcome.

There being no further issues, the case is now in condition for allowance, and such allowance is respectfully solicited.

As to the specific 112 objections to the claim language, items "b" and "c" (see page 3 of the office action), these were directed to claims 48 and 49, which have been cancelled. Thus, only objection "a" needs discussion.

As suggested by the Examiner, we are using the wording appearing at page 2, lin 1,2 and 7,8 and page 6, lins 18-20. Namely, we now recite "a container that contains known biopolymer segments fixed onto an inner wall of said container and unknown biopolymer segments existing in a solution contained within said container, which are to be hybridized, said container being removable from said measuring apparatus", in main claims 50 and 59.

In view of the foregoing, allowance is respectfully solicited.

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13 Augsut 04

respectfully

M. KOJIMA

Replacement Paragraph Page 4, line 12

-- According to ~~claim-2~~ a feature of the present invention, the above-mentioned measuring apparatus may be provided with means for altering the direction of an electric field applied through electrodes, so that wrongly hybridized segment pairs are easily separated.--

Replacement Paragraph, page 4, line 16

-- According to ~~claim-3~~ another feature of the present invention, the container may be formed using a film. If the container is made of a film, sites and electrodes can be easily brought close to each other, thus, the electric field can be positioned with higher precision and the cost of the container can be reduced.--

Replacement Paragraph, page 4, line 20

-- According to ~~claim-4~~ a further feature of the present invention, the electrodes may be provided with protrusions formed at spatial positions corresponding to sites where biopolymeric molecules within the container gather. This configuration is advantageous since electric field strength can be made intensive at specific locations. --

Replacement Paragraph, page 5, line 1

-- According to ~~claim-5~~ another feature of the present invention, conductive members may be formed at positions corresponding to sites where biopolymeric molecules within the container gather.--

Replacement Paragraph, page 5, line 4

-- According to ~~claim-6~~ a further feature of the present invention, the electrodes may be placed in mechanical contact

with the container.--

Replacement Paragraph, page 5, line 6

-- According to ~~claim-7~~ another feature of the present invention, the electrodes may be of transparent type.--

Replacement Paragraph, page 5, line 8

--According to ~~claim-8~~ a further feature of the present invention, the transparent electrodes maybe formed using an ITO film.--

Replacement Paragraph, page 5, line 10

-- According to ~~claim-9~~ another feature of the present invention, the biopolymer may be either DNA, RNA, PNA or electrically charged protein.---

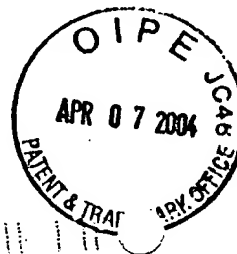
010814-TANAMI RCE of 09/927,049

(1) RCE letter

(2) IDS

(3) fee calculation sheet (2 copies)  
Charge of 11-1500 to \$770.00

(4) Prel. Amend



IN THE US PATENT OFFICE

EXAMINER - Beisner

GROUP - 1744

SN - 09/927,049 RCE

FILED - 8/9/01

BY - Tanaami

SIRS:

Kindly amend the above RCE as follows:

Claims 1-49, cancel without prejudice (previously or herewith)

Claims 50-67, add these new claims as shown in the Appendix.

REMARKS

Claims 50-67 are renumbered old claims 30-47, which were allowed. Claim 50 is old claim 30, as now amended to overcome various 112 problems indicated in the Advisory Action dated 3/12/04. Claim 59 is old claim 39, as now amended to overcome various 112 problems indicated in the Advisory Action of 3/12/04.

Since these claims were previously allowed on the merits, and the 112 problems have now been cured, it is believed that these claims 50-67 are now allowable, and such allowance is respectfully solicited.

Old claims 48 and 49 have been cancelled to expedite prosecution.

Accordingly, there are no further issues outstanding and allowance is respectfully solicited.

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2 April 04

I hereby certify that the correspondence upon which this notice is placed is being deposited with the US Postal Service as first class mail in an envelope addressed to the Commissioner for Patents, Box 1450 Alexandria, VA 22313, or to US Trademark Office, 2800 Crystal Drive, Arlington, VA 22202, on the date set forth below. MOONRAY KOJIMA, ATTORNEY

Date 4/2/04 (signed) 

PRELIMINARY AMENDMENT

Respectfully  
M. KOJIMA 

Claims 1-29 (cancelled previously)

Claims 30-49 (cancelled herewith)

50. (new) A measuring apparatus for measuring genetic sequence of electrically charged biopolymers by hybridization, said apparatus comprising:

a container that contains known biopolymer segments fixed onto an inner wall of said container and unknown biopolymer segments existing in a solution contained within said container, which are to be hybridized, said container being removable from said measuring apparatus; and

one or more electrodes disposed to be adjacent to said container for applying an electric field to said container, said one or more electrodes being electrically insulated from said container, and further being provided with protrusions formed at spatial positions corresponding to sites whereat gather a plurality of types of biopolymer segments within said container.

51.(new) The apparatus of claim 50, wherein conductive members are formed at spatial positions corresponding to said sites.

52.(new) The apparatus of claim 50, wherein said biopolymer segments are DNA, RNA, PNA, or electrically charged proteins.

53.(new) The apparatus of claim 50, wherein said container is made of a film, and said one or more electrodes are in mechanical contact with said container and are made of transparent film.

54.(new) The apparatus of claim 53, wherein said biopolymer segments are DNA, RNA, PNA or electrically charged proteins.

55.(new) The apparatus of claim 50, wherein said container

is made of a film.

56.(new) The apparatus of claim 50, wherein said one or more electrodes are in mechanical contact with said container.

57.(new) The apparatus of claim 50, wherein said one or more electrodes are transparent electrodes.

58.(new) The apparatus of claim 57, wherein said one or more electrodes are made of ITO film.

59. (new) A measuring apparatus for measuring genetic sequence of electrically charged biopolymers by hybridization, said apparatus comprising:

a container that contains known biopolymer segments fixed onto an inner wall of said container and unknown biopolymer segments existing in a solution contained within said container which are to be hybridized, said container being removable from said measuring apparatus;

one or more electrodes disposed to be adjacent to said container for applying an electrical field to said container, said one or more electrodes being electrically insulated from said container; and

means for altering direction of said electric field so that wrongly hybridized segment pairs are separated; wherein

said one or more electrodes are provided with protrusions formed at spatial positions corresponding to sites whereat gather a plurality of types of biopolymer segments within said container.

60.(new) The apparatus of claim 59, wherein conductive members are formed at spatial positions corresponding to said sites.

61. (new) The apparatus of claim 59, wherein said biopolymer segments are DNA, RNA, PNA or electrically charged proteins.

62.(new) The apparatus of claim 59, wherein said container is made of a film, wherein conductive members are formed at spatial positions corresponding to said sites; and wherein said one or more electrodes are in mechanical contact with said container and are made of transparent film.

63.(new) The apparatus of claim 62, wherein said biopolymer segments are DNA, RNA, PNA or electrically charged proteins.

64.(new) The apparatus of claim 59, wherein said container is made of a film.

65.(new) The apparatus of claim 59, wherein said one or more electrodes are in mechanical contact with said container.

66.(new) The apparatus of claim 59, wherein said one or more electrodes are transparent electrodes.

67.(new) The apparatus of claim 59, wherein said one or more electrodes are made of an ITO film.